

**WHAT IS CLAIMED IS:**

1. Data playback equipment for playing back data recorded on a disk medium,  
comprising:

5 analog-to-digital conversion means for converting an analog signal obtained from  
the disk medium to a digital value;

target holding means for holding an ideal value for a signal related to an output of  
the analog-to-digital conversion means as a target; and

error detection means for detecting an error between the signal related to the output  
of the analog-to-digital conversion means and an output of the target holding means and  
10 generating a signal representing the error as a parameter signal correlated with an error rate  
of played-back data,

wherein the quality of the analog signal is adjusted so that the parameter signal is  
minimized, to thereby optimize the margin of the error rate of played-back data.

15 2. The data playback equipment of Claim 1, further comprising:

a filter receiving the output of the analog-to-digital conversion means, the filter  
having taps of which coefficients are variable; and

error minimization means for updating the tap coefficients of the filter so that an  
error between an output of the filter and the output of the target holding means is  
20 minimized.

3. The data playback equipment of Claim 2, wherein the filter is a partial response  
(PR) equalization filter for realizing PR equalization,

the target holding means holds a plurality of ideal values for the PR equalization as  
25 targets, and

the error detection means and the error minimization means respectively compare a plurality of tap outputs of the filter reflecting the output of the analog-to-digital conversion means with the plurality of ideal values.

5           4. The data playback equipment of Claim 3, further comprising addition means for giving the sum of arbitrary two outputs among a plurality of outputs of the error detection means.

10           5. The data playback equipment of Claim 3, further comprising addition means for giving the sum of at least three or all outputs among a plurality of outputs of the error detection means.

15           6. The data playback equipment of Claim 3, further comprising weighting means for performing arbitrary weighting for a plurality of outputs of the error detection means.

7. The data playback equipment of Claim 6, wherein the weighting means has a function of outputting only a median value among the plurality of outputs of the error detection means.

20           8. The data playback equipment of Claim 1, further comprising means for using the parameter signal as information indicating the quality of the disk medium.